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6. An optical element according to Claim 4, wherein the ceramic material is a material that absorbs the wavelength

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18. ~~An element~~ according to Claim 17, wherein the

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member comprising an inorganic material at the periphery of an optical element.

24. An optical element according to Claim 23, wherein the material comprises a thin film ceramic.

25. An optical element according to Claim 24, wherein the material comprises at least one of TiC, TiN, ZrC, ZrN, HfC and HfN.

26. An optical element according to Claim 23, wherein the material comprises metallic materials.

27. An optical element according to Claim 26, wherein the material comprises a metal subjected to reflection preventive treatment.

28. An optical element according to Claim 26 or 27, wherein the material comprises at least one of chromium, aluminum, molybdenum, tantalum and tungsten.

29. An optical element according to Claims 26 to 28, wherein the reflection preventive treatment comprises a laminated structure of a metal oxide layer on the light-shielding member.

30. An optical element according to Claims 26 to 28, wherein the metal oxide layer comprises at least one of silicon oxide and aluminum oxide.

31. An optical element according to Claims 23, wherein the material comprises a compound of a metal and silicon.

32. An optical element according to Claims 31, wherein the material comprises a compound of at least one of molybdenum and tungsten, and silicon.

33. An optical element according to Claims 23, wherein the material comprises a semiconductor material.

34. An optical element according to Claims 33, wherein the material comprises silicon,

35. An optical element according to Claims 23, wherein the material of the light-shielding member comprises a metal oxide.

36. An optical element according to Claims 35, wherein the material of the light-shielding member comprises titanium oxide.

37. An element according to any of Claim 1 to 35, wherein a diffractive surface is formed in said effective area.

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38. An element according to any of Claim 1 to 35, wherein said element is a diffractive optical element.

39. An optical system having the optical element according to one of Claims 1 to 35.

40. An illumination apparatus illuminating a face utilizing the optical system containing the optical element according to any one of Claim 1 to Claim 35.

41. A projection exposure apparatus for illuminating a pattern on a first subject by taking advantage of a light flux via the optical system containing the optical element according to one of Claims 1 to 35, thereby projecting and exposing the pattern on the first subject on a substrate face with the projection optical system.

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42. A method for manufacturing a device, wherein the pattern on the mask is illuminated by taking advantage of the light flux via the optical system containing the optical

